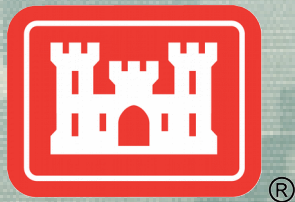


eCoastal: Overview & Status

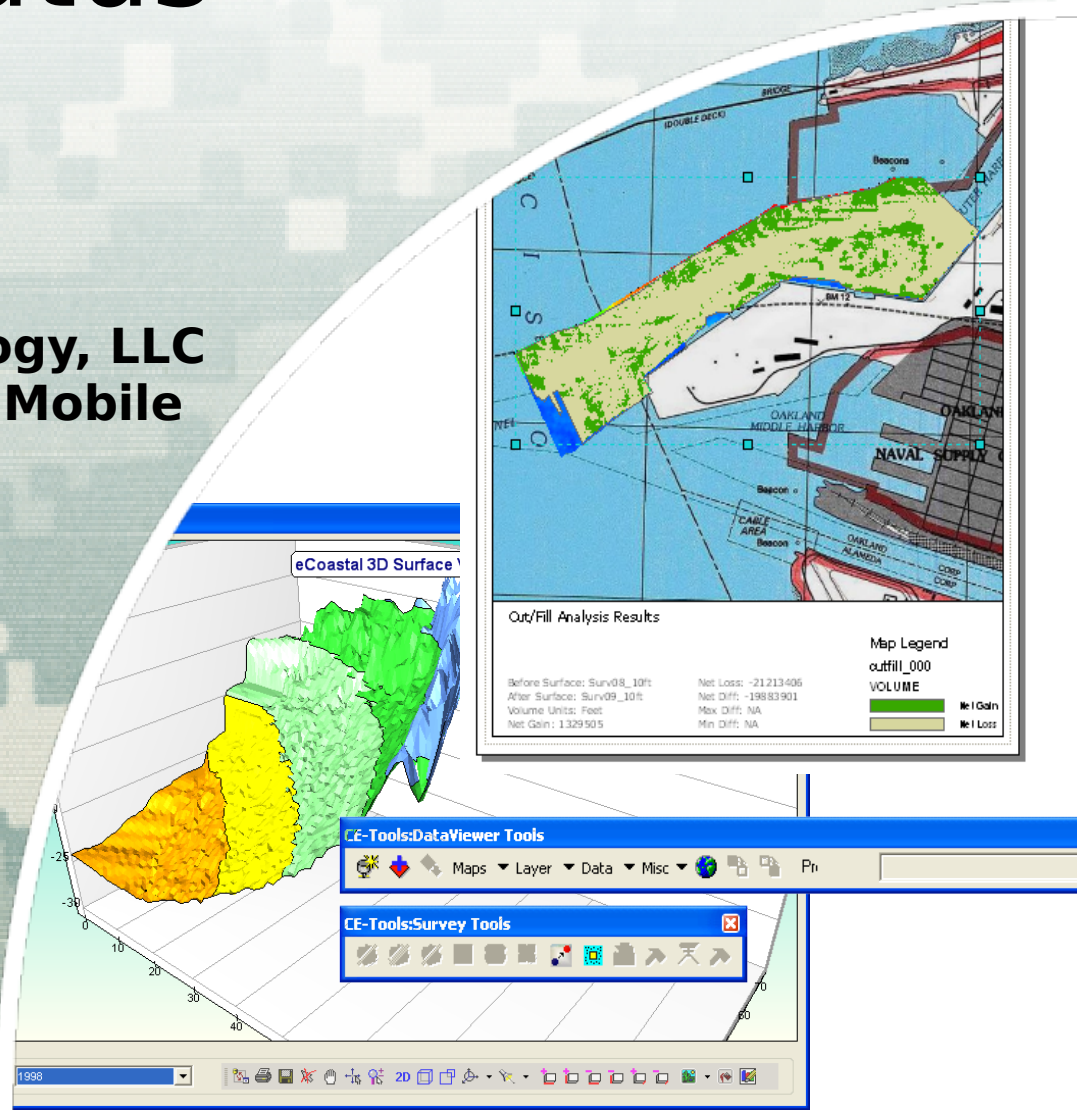
eCoastal Workshop

Rose Dopsovic
Bowhead Science & Technology, LLC
for the Spatial Data Branch, Mobile
District

Rose.Dopsovic@us.army.mil
251.680.4047



US Army Corps of Engineers
BUILDING STRONG®



Agenda

- eCoastal Defined
- eCoastal Databases
 - Building an SDS Compliant Database
 - Populating a Database
 - Authoritative Data
 - Draft Data
 - Accessing an eCoastal Database
 - The Power of Layer Files
 - Importance of Standard Operating Procedures
- The eCoastal 'Umbrella'



eCoastal Goals

- Easily access coastal datasets for data analysis and viewing in a GIS or mapping platform without regard for individual project boundaries.
- Provide decision makers and/or project engineers all of the tools needed to make educated decisions with coastal datasets.



What some think eCoastal is...

- A GIS or
- A Database or
- An Application or
- A Website or
- The DataPicker Tool or
- The Volume Difference Tool or
- ...



What is the eCoastal Program?

- Data Architecture & Applications for the Coastal Environment
 - eCoastal is an **architecture** developed by the U.S. Army Corps of Engineers that addresses spatial data standards, geodatabase structure and custom coastal GIS applications.
 - Series of custom GIS tools and applications to assist with the **data access, analysis, and storage** of coastal datasets.
 - The eCoastal Program provides a foundation for a data management plan designed to function as an enterprise GIS. It was developed to concentrate on the specific needs of the coastal engineer.



eCoastal is a GIS

- A GIS: A Geographic Information System
 - What is a GIS? A system that **captures**, **stores**, **analyzes**, **manages**, and **presents** data that is linked to location.
 - Captures/Stores/Manages: SDSFIE compliant Geodatabase structure, Recommendations for SDSFIE coastal features
 - Analyzes: Survey, SBAS-A, Shoreline Classification, and CoSCA ArcMap Tools, Project Databases (e.g. RSM Project Viewer)
 - Manages: DataPicker Tools, SAMS, EGIS Management Database, Engineer Manual
 - Analyzes/Presents: ArcMap, Online Mapping – 
ArcIMS/ArcGIS Server/Google Earth
-
- BUILDING STRONG®**

What is the 'eCoastal Database'?

- The eCoastal Program distributes a SDSFIE database filter that provides the structure for coastal specific datasets (SDSFIE 2.6)
 - Common coastal features have been selected and added to the filter.
 - Using the SDSFIE Geodatabase Builder, this filter can be used to generate a compliant design for a database.



What is the 'eCoastal Database'?

- The goal is for each District to have an enterprise database that houses all GIS data to support the District.
 - For Districts without an EGIS, the eCoastal program provides a foundation (database filter) and lessons learned to build a database.
 - This foundation can grow to eventually serve as the District's EGIS.



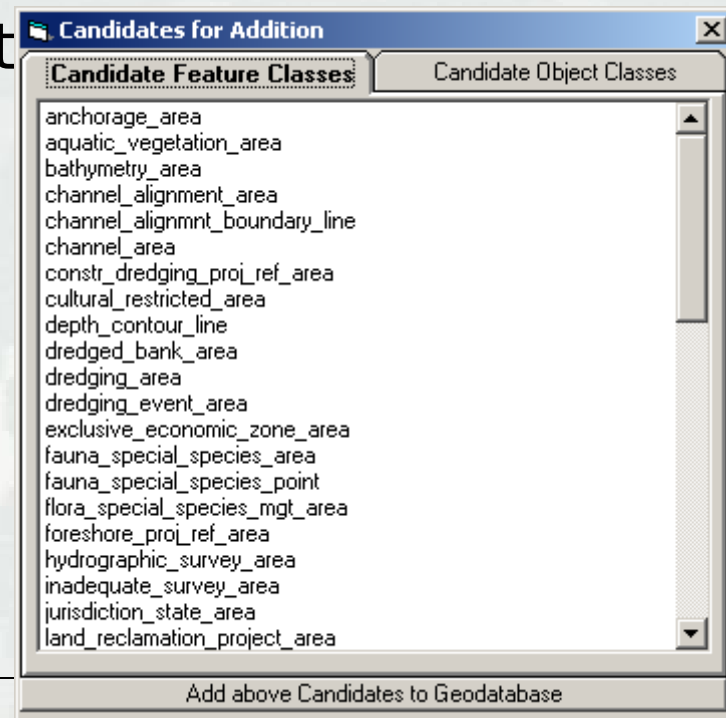
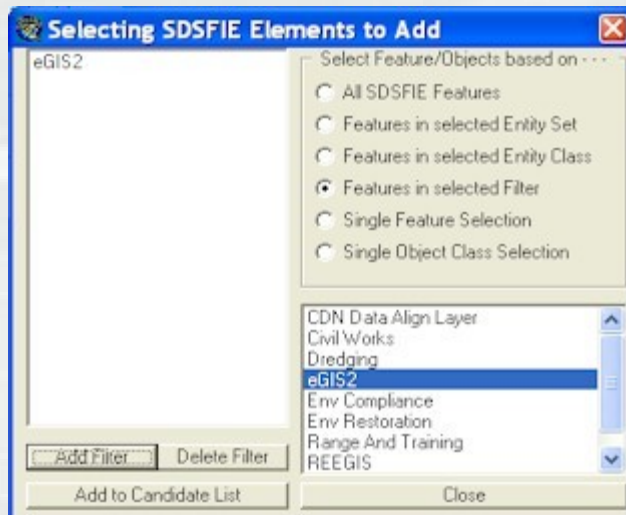
What is the 'eCoastal Database'?

- For Districts with an existing EGIS, only the initialization and setup is needed for the custom tools for an eCoastal implementation.
 - NOTE: Some eCoastal tools require strict adherence to SDSFIE compliant feature classes in order for them to work properly.
- The eCoastal program does not provide any data for District geodatabases, only structure.



Using the Database Filter

- The eCoastal SDS geodatabase filter will create a blank database. This database will contain all of the feature datasets and classes that represent coastal features, all preformatted with the required attribution of the database.



File
Edit
View
Go
Tools
Help

Location: D:\mydocuments\Demonstrations\GIS\Spatial Server\GIS_Sample_GDB\gdbtempl

Stylesheet: FGDC ESRI

gdbtemplate

boundary

district_area

representation_district_area

buildings

cadastre

cultural

ecology

env_haz_emergencyprep

fauna

flora

geodetic

geology

hydrography

improvement_dredging

improvement_erosion

improvement_general

improvement_machinery

improvement_recreation

land_status

landform

bathymetry_area

channel_xsection_line

depth_contour_line

elevation_contour_line

elevation_profile_point

hydrographic_survey_site

physiographic_area

sediment_modeling_point

sediment_sample_point

shoal_area

sounding_point

spot_elevation_point

survey_trackline

Contents

Preview

Metadata

grid_value	coord_x	coord_y	coord_z
District Supplies Data			

Record: 0 Show: All Selected Records (of 0)

Preview: Table

eCoastal

Empty Containers

eCoastal

Container Organization

Database Content

- The final resting place for authoritative data sets should be the enterprise geodatabase within the application SDS feature.
 - All data of the same theme, should reside in a single feature class.
 - E.g. There will only be one shoreline feature class. This class will hold all shorelines. Attribution of individual features makes record unique.



Database Content – Layer Files

- Layer files (*.lyr) can be used (and are the primary data display used by the Data Picker tool) to retain the definition query applied to the attributes.
- Metadata can be applied to the newly created layer file.



Layer Files

A layer is what you see in the ArcMap table of contents. A layer contains:

- the pathname or link to the dataset (local or remote)
- symbology and display information
- feature or row selection information (definition queries)
- Metadata can be attached to a layer file



Layer Files

- Layer files hold all of the database connection detail, so the end-user does not need to know “where” the data is stored.
- For the non-GIS user, the layer file simplifies and standardizes the data display for features within a feature class.

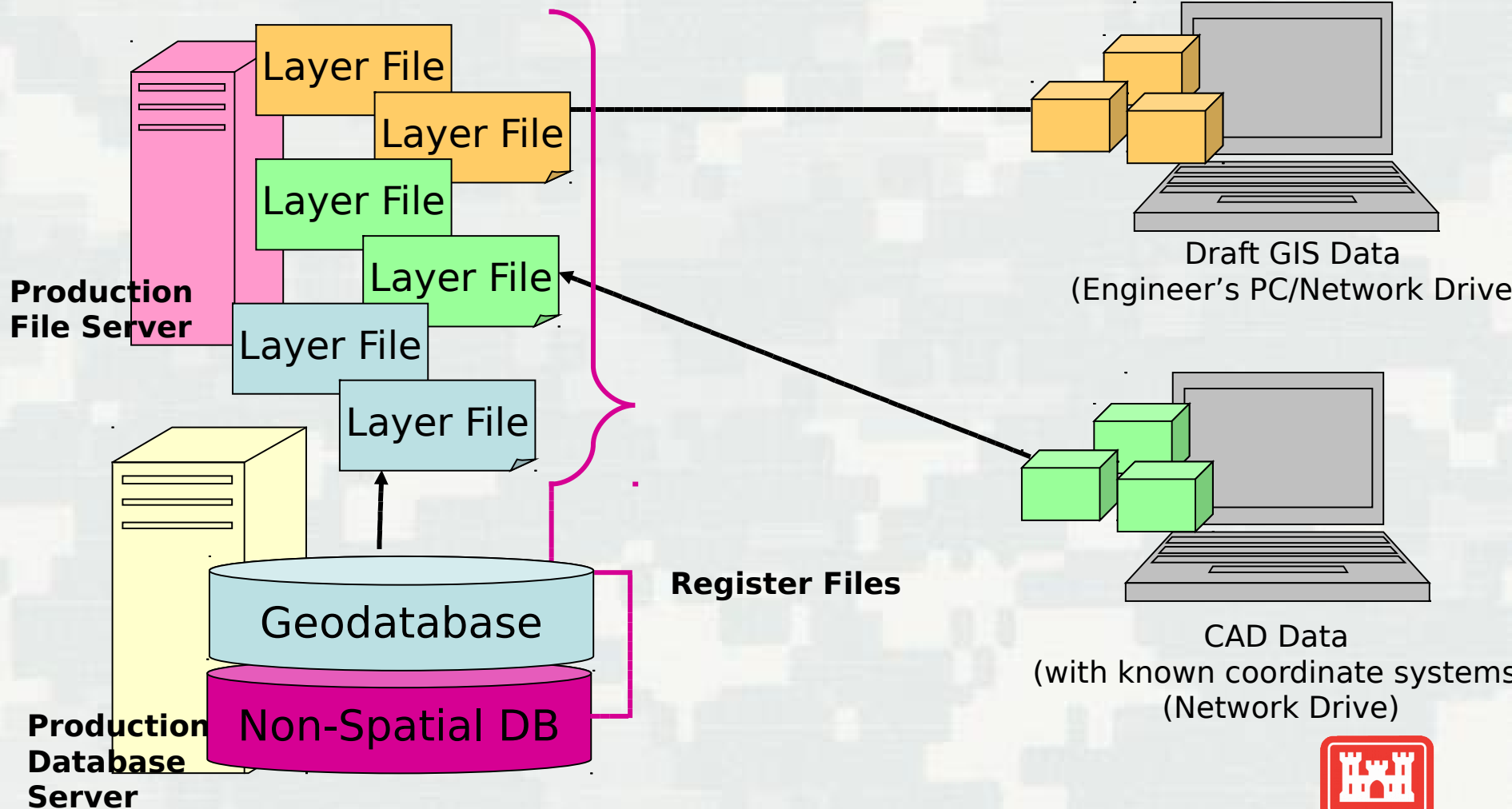


Layer Files – Draft Data

- A goal of the eCoastal Program is to provide easy access to data. This includes “working” or “draft” datasets.
- One technique to easily access draft datasets is to centralize the storage locations for working feature classes or shapefiles.
 - Layer files can be created for the shapefile (fully qualified computer name required in data source) then the layer file can be distributed.
 - This permits the data steward to follow “business as usual”. Data can remain in the defined a location, and all eCoastal users can have read-only access to this dataset, accessible through the Data Picker tool.

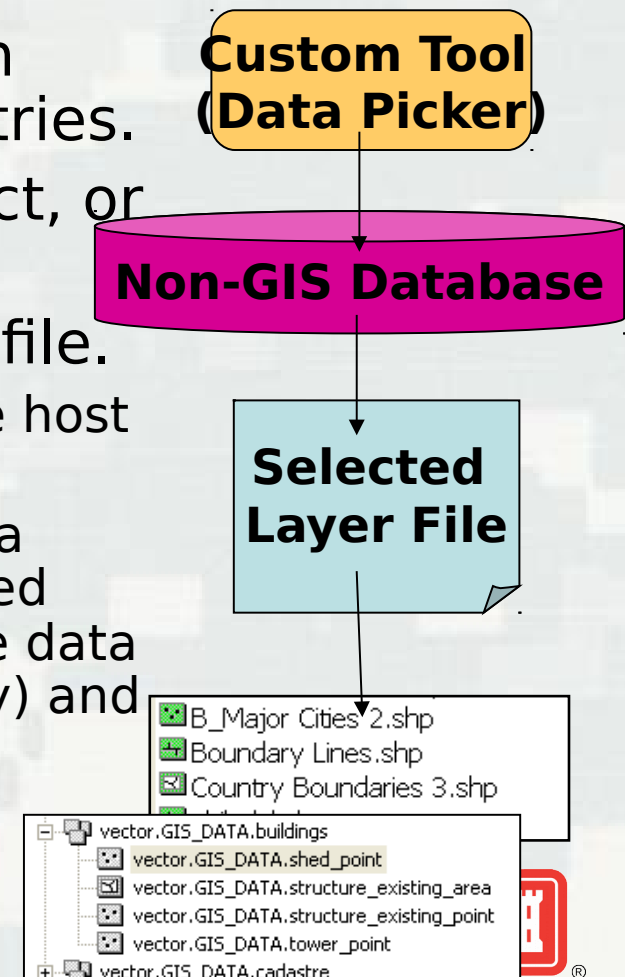


Layer File Architecture



End User Access

- Custom ArcMap Desktop Application connects to registered Layer file entries.
- Users can search by keyword, project, or category to locate data.
- Data is retrieved through the Layer file.
 - The Layer file gathers the data from the host location.
 - Layer files can be use to connect to data across Districts. Provided a fully qualified server name or IP address is used in the data source, data can be retrieved (read-only) and displayed on the requestors computer. (Permission to file server is required)
 - **Enterprise GIS!**



End User Access

- Online mapping applications can be created off of generated MXDs or any data stored in the database.
- ‘Flavor’ of online mapping application will be defined by project or user requirements.
- The eCoastal program offers templates, lessons learned, technology transfers, and architecture **designing** and **hosting** internal and external online mapping applications.



Architecture Summary

- Geodatabase Structure with SDSFIE compliancy
- Supporting Database (non-spatial) to power the custom tools (business data)
- Layer files to Standardize Display options for data.
- Custom GIS Tools



Standard Operating Procedures

- An SOP is not a requirement for an eCoastal implementation, however it is **STRONGLY** recommended.
- This document should guide the path of what happens to data once it enters a District.
 - Encourages proper archiving
 - Ensures consistency
 - Adds a layer of QA/QC
- Assign a person to police the policy!



What's Under the eCoastal Umbrella?

- SDSFIE database filter (version 2.6)
- SDSFIE Adaptations (version 3.0)
- ArcMap Tools: DataViewer, Survey Tools, SAMS, CoSCA, SBAS-A
- Websites:
 - eCoastal Main
 - RSM Database Website
 - Shore Protection Database
 - Navigation Project Database
 - Sediment Needs Application
 - RSM Long Island New Orleans District Sediment Samples Application
 - Threatened & Endangered Species System (TESS)



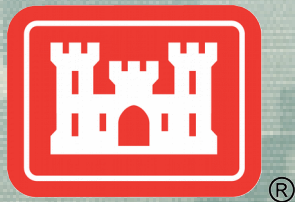
What's Under the eCoastal Umbrella?

- Web Mapping (guidance on how to build mapping services)
 - OPJ Coastal Mapping Services: WMS & IMS
 - GoMex
- Related Programs/Projects
 - RSM (Regional Sediment Management)
 - LCAST (Louisiana Coastal Area – Science & Technology)
 - GRSMMP (Gulf Regional Sediment Management Master Plan)
 - GoMex (Gulf of Mexico Alliance)
 - NCDB (Navigation & Coastal Databank)
 - ...



Questions?

<http://eCoastal.usace.army.mil>



US Army Corps of Engineers
BUILDING STRONG

